



County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

Zika Virus Outbreak - FAQs

About Zika

What is Zika virus infection?

Zika virus infection is a viral disease primarily spread to people through bites of infected mosquitoes. Mosquitoes become infected by feeding on infected persons. Zika virus is transmitted primarily by *Aedes aegypti* (Yellow fever mosquito). *Aedes albopictus* (Asian tiger mosquito) can also spread the virus.

Although the primary risk for getting infected with Zika is through mosquito bites, once the virus is in a person it can also be spread through sexual contact, from mother to her fetus during pregnancy or around the time of birth and possibly through blood transfusion.

Where does Zika virus occur?

Before 2016, outbreaks of Zika virus infection have occurred in Africa, Southeast Asia, and the Pacific Islands. Currently, outbreaks are occurring in many countries and territories in Central and South America, the Caribbean, Mexico, and Pacific Islands. For a map, see the U.S. Centers for Disease Control and Prevention (CDC) website at <http://www.cdc.gov/zika/geo/index.html>.

Because the mosquitoes that spread the virus are found around the world, it is likely that outbreaks will spread to new countries. Florida is the only state so far to report local mosquito-borne transmission of Zika virus in the continental U.S. For a map of where the mosquitoes that could spread Zika virus are located in the U.S., see the CDC website at <http://www.cdc.gov/zika/vector/range.html>.

Who gets Zika virus infection?

Florida is the only state so far to report local mosquito-borne transmission of Zika virus in the continental U.S. In other states including Virginia, Zika virus infections have only been reported in travelers returning to the continental U.S. from affected areas. Some non-travelers in the United States have become infected with Zika through sex with an individual who has traveled to an area with Zika. For the most recent case counts, visit [CDC's Cases in the United States webpage](#).

Since mosquito season in northern Virginia will last until the first hard frost, it is possible that the virus could be picked up in our local mosquito population and spread to others. Therefore, everyone should take precautions to protect themselves from mosquitoes and to reduce the mosquito population. This includes wearing long sleeves shirts and long pants, sleeping in rooms with screened windows or air conditioning, using Environmental Protection Agency

(EPA)-registered insect repellent (bug spray), and eliminating standing water by tipping and tossing containers around your home and property (including bird baths, flower pots, buckets).

Why is there concern about Zika?

Zika is raising concerns because of two rare conditions associated with the virus: microcephaly and Guillain-Barré syndrome (GBS). Microcephaly is a birth defect where an infant's head and brain is smaller than normal. In GBS, the immune system attacks nerve cells, causing weakness and sometimes paralysis.

How widespread would an outbreak of Zika virus be in the United States?

According to the CDC, it is not possible to predict how much Zika virus would spread in the continental United States. Many areas in the United States have the type of mosquitoes that can become infected with and transmit Zika virus. However, recent chikungunya and dengue outbreaks (both mosquito transmitted illnesses) in the continental United States suggest that Zika outbreaks in the continental U.S. may be relatively small and focal. Florida is already experiencing some local mosquito-borne spread of Zika virus in parts of the state.

For Zika to cause an outbreak in the continental U.S.:

- People infected with the virus need to enter the United States.
- An *Aedes* mosquito must bite the infected person during the relatively short time that the virus can be found in the person's blood.
- The infected mosquito must live long enough for the virus to multiply and for the mosquito to bite another person.

What states could be affected by Zika?

Zika virus can potentially be found anywhere in the U.S. because of mosquito bites, sexual transmission and travel. Florida is the only state so far to report local mosquito-borne transmission of Zika virus in the continental U.S., but there have been travel-associated cases in most states. Mosquitoes need to bite people who are actively infected with Zika in order to spread the virus. Experts believe that a large-scale outbreak of Zika in the United States is unlikely. But it is possible that as the weather gets hotter and more humid, there could be some mosquito-borne Zika cases in the U.S.

What is Public Health doing in response to Zika?

The CDC, Virginia Department of Health and Fairfax County Health Department (FCHD) continue to monitor Zika outbreaks in the American tropics and are providing updated guidance on Zika to clinicians and to the community. Efforts are also underway to prevent the spread of Zika in the United States. Public health agencies at all levels are activating response plans to facilitate testing of at-risk individuals, to perform cases investigations, and to reduce the mosquito population and minimize spread through surveillance and control activities, education and outreach.

Transmission

How is Zika virus spread?

Zika virus is mainly spread from the bite of a mosquito carrying the virus. The person infected by the mosquito will have Zika virus in their blood, especially in the first week of illness. Another mosquito bites that infected person, becomes infected and can then bite another person. People who are infected but who are not sick may still pass the virus on to mosquitoes that bite them.

Zika virus can also spread through sexual transmission, from a pregnant woman to her fetus during pregnancy or around the time of birth, and possibly through blood transfusion. There is still more to be learned regarding sexual contact and in utero modes of transmission for Zika virus.

Can the Zika virus be spread through sexual activity?

A person with Zika virus can pass it to his or her sexual partners. Sexual exposure includes sex without a condom with a person who traveled to, or lives in an area with Zika, even if that person does not have symptoms of Zika.

Zika virus can remain in semen longer than in blood. Studies are underway to find out how long Zika stays in the semen and vaginal fluids of people who have Zika and how long it can be passed to sexual partners. Only people whose sexual partners have traveled to or live in an area with Zika are known to be at risk for getting Zika virus through sex, even if that person does not have symptoms of Zika.

The CDC recommends sexual partners who may be at risk for Zika should use a condom every time they have sex (i.e., vaginal, anal, or oral sex) during the pregnancy or not have sex for the duration of the pregnancy. Pregnant women should discuss their male partner's potential exposures to mosquitoes and history of Zika-like illness with their healthcare provider. More information on Zika and sexual transmission can be found at <http://www.cdc.gov/zika/transmission/sexual-transmission.html>.

Can Zika be transmitted by coughing or sneezing?

No. Zika virus is mainly spread through the bite of an infected mosquito. It also can be passed from a mother to her baby during pregnancy and spread through sexual contact and possibly through blood transfusion. There is no evidence that you can get Zika through coughing and sneezing.

Can the Zika virus be transmitted through saliva?

Zika virus has been found in saliva, but it is not known if Zika can be spread through saliva. It may be present in a form that is incapable of spreading, or in such low levels that transmission is impossible or unlikely. More information is needed and CDC is studying the question of transmission.

Can the Zika virus be transmitted through breastmilk?

To date there are no reports of infants getting Zika through breastfeeding. Because of the benefits of breastfeeding, mothers are encouraged to breastfeed even in areas where Zika is found.

Can Zika be transmitted through blood transfusions?

There is a strong possibility that Zika virus can be spread through blood transfusions. But to date, there have been no confirmed cases of blood transfusion-transmission in the United States.

Can Zika virus be transmitted to animals?

At this time there have been evidence of pets or livestock becoming sick with Zika or of being able to spread Zika to people or other animals.

If I had Zika once, can I get it again?

Based on information about similar infections, once you have been infected with Zika virus, you are likely to be protected from future infections. Most people may be unaware of a Zika infection and thus won't know if they have immunity.

There is a lot of information out there about Zika. What are the top 5 things I need to know about Zika virus?

1. Zika primarily spreads through the bite of an infected mosquito. You can also get Zika through sex (<http://www.cdc.gov/zika/transmission/sexual-transmission.html>). Many areas in the United States have the type of mosquitoes that can spread Zika virus. These mosquitoes are aggressive daytime biters and can also bite at night. Also, Zika can be passed through sex from a person who has Zika to his or her sex partners.
2. The best way to prevent Zika is to prevent mosquito bites. This can be accomplished by using an EPA-registered repellent, wearing long-sleeved shirts and long pants and removing standing water from around your home.
3. Zika is linked to birth defects, including microcephaly. Doctors have also found other problems in pregnancies and among fetuses and infants infected with Zika virus before birth.
4. Pregnant women should not travel to areas where Zika transmission is occurring.
5. Returning travelers infected with Zika can spread the virus through mosquito bites. During the first week of infection, Zika virus can be found in a person's blood and can pass from an infected person to a mosquito through mosquito bites. An infected mosquito can then spread the virus to other people. All travelers returning from a Zika -affected area should take steps to prevent mosquito bites for 3 weeks upon return (even if you do not feel sick).

Symptoms, Diagnosis & Treatment

What are the symptoms of Zika virus infection?

About 80 percent of people who are infected do not become sick. For the 20 percent who do become sick, the most common symptoms include fever, rash, joint pain, and conjunctivitis (red eyes). The illness is usually mild and the symptoms typically last several days to a week. People usually don't get sick enough to go to the hospital, and they very rarely die of Zika. More information about symptoms can be found at <http://www.cdc.gov/zika/symptoms/index.html>.

How soon do symptoms occur?

Evidence from case reports and experience from related flavivirus infections indicate that the incubation period for Zika virus disease is likely 3–14 days. This means that symptoms are likely to occur from 3 to 14 days after exposure to Zika virus.

Who should be tested?

Consult with your doctor if you experience any symptoms of Zika virus, especially if you are pregnant. Be sure to tell them about any recent travel or any recent history of mosquito bites. Your doctor can help determine if you need to be tested for Zika.

[\[Consult testing algorithm as needed\]](#)

How do you diagnose if someone has the Zika virus?

Preliminary diagnosis is based on the patient's clinical symptoms, places and dates of travel, and activities. A blood or urine test can confirm a Zika infection. Health care providers who are concerned about a patient with Zika symptoms, travel history or recent mosquito bites should consult with their local health department about the need for testing a patient. Virginia's state lab, the Division of Consolidated Laboratory Services (DCLS), has the capability to test for Zika in Virginia. Or your provider may use a commercial lab.

What are the guidelines in Virginia for Zika testing? Does a woman have to already be pregnant and have traveled to an area where the disease is present?

In Virginia, public health testing is available for:

- Pregnant women with travel to a Zika-affected area, or possible sexual exposure to Zika virus during pregnancy, or any pregnant woman who has had two or more symptoms of Zika with a history of mosquito bites within 2 weeks of symptom onset;
- Infants who were born to mothers with laboratory evidence of confirmed or possible Zika virus infection or were diagnosed with microcephaly, intracranial calcifications, or other abnormality (by fetal ultrasound);
- Non-pregnant individuals who traveled to Zika-affected area and have two or more symptoms of Zika virus (fever, rash, conjunctivitis, joint pain) during or within 2 weeks of travel;
- Non-pregnant individuals who did not travel to a Zika-affected area who have one or more symptoms of Zika and had sexual exposure to Zika virus or have three or more symptoms of

Zika not explained by another etiology and had mosquito bites in the 2 weeks before start of symptoms; and

- An individual diagnosed with Guillain-Barre syndrome not known to be associated with another cause of illness.

What about a woman and her partner who are trying to become pregnant? Can they be tested?

Before you or your partner travel, talk to your healthcare provider about your plans to become pregnant and the risk of exposure to Zika virus infection. During travel, couples should strictly follow mosquito prevention tips. Routine testing is not currently recommended for women and men who are attempting conception who have had possible exposure to Zika virus but have not had clinical illness.

How much does the test(s) cost?

There is no cost associated with testing through a public health laboratory in Virginia or through CDC, however there may be costs associated with the office visit to your healthcare provider. Commercial laboratories may also be able to provide Zika virus testing and you would need to confirm with your insurance providers if those costs are covered or reimbursed.

How long does it take to get results?

For public health testing, the turnaround time is 1 to 2 weeks. The Fairfax County Health Department does not draw specimens on individuals for Zika virus disease testing. The Health Department's role is to approve and coordinate testing requests from community healthcare providers for public health testing.

Why won't some doctors test for Zika? I was sick after I came back from a Zika country and was told by my primary care doctor that they didn't have a way to test for Zika.

The Fairfax County Health Department continues to educate our local healthcare providers about the risks of Zika and the availability of testing. Zika testing can be ordered by any physician. If your physician has a question or does not know how to order testing for Zika virus, he or she should call the Health Department at 703-246-2433, TTY 711.

What is the treatment for Zika virus infection?

There is no specific treatment for Zika virus infection. Healthcare providers primarily provide supportive care to relieve symptoms. This may include rest, fluids, and use of over-the-counter medicine. Infected people should also stay indoors or wear protective clothing and mosquito repellent for three weeks even if they do not feel sick. This will help prevent mosquitoes from biting them and potentially spreading the virus to others in the community.

What should I do if I think I have Zika virus infection?

Consult with your doctor if you develop any of the symptoms of Zika. Be sure to tell them about any recent travel or any recent mosquito bites. Your healthcare provider may test you for Zika virus and other similar mosquito-borne illnesses.

How long is someone infected with Zika?

Zika virus usually remains in the blood of an infected person for about a week, but it can be found longer in some people. Therefore, to prevent introduction and spread of Zika virus into local mosquitoes, it is recommended that infected persons stay indoors and wear protective clothing and mosquito repellent for three weeks after exposure.

If I get Zika what should I do to protect my family?

Zika virus is transmitted to people primarily through the bite of an infected *Aedes* species mosquito (*A. aegypti* and *A. albopictus*). Mosquitoes become infected when they feed on a person already infected with the virus. Infected mosquitoes can then spread the virus to other people through bites.

To protect others from becoming infected, you will be asked to avoid getting mosquito bites while the virus is in your blood (approximately one week, but it may be longer for some people). You will be asked to avoid mosquito bites for up to three weeks and to wear long sleeves and pants and use mosquito repellent when you have to go outdoors. This will help prevent a mosquito from biting you, getting infected with the virus, and then biting others.

Zika is not transmitted by touch, breathing, coughing, sneezing, sharing foods etc., so there are no risks of transmission by being around your family. Sexual transmission of the Zika virus is possible between a person who has Zika to his or her sexual partners.

If you are asymptomatic are you infectious?

Yes, you can still be infectious even if you are without symptoms. In fact, 80 percent of individuals who have the Zika infection have no symptoms. That is why people who are coming back from Zika-affected areas are asked avoid mosquito bites for 3 weeks after their return, even if they don't have symptoms. They should limit time outdoors and wear long sleeves and pants and use mosquito repellent when going outside.

Is there active monitoring at airports for Zika or is it mainly based on travelers' self-reporting?

At this time, the CDC has not recommended active surveillance or monitoring of travelers returning from international destinations as most people with Zika infection do not have symptoms and would not appear sick. Travelers returning from Zika-affected areas are told to closely monitor themselves for symptoms and to avoid mosquito bites for at least three weeks upon return.

Prevention**How can Zika virus infection be prevented?**

There is no vaccine to prevent Zika virus infection. Infections can be prevented by avoiding mosquito bites. This includes wearing long-sleeved shirts, long pants and socks, using insect repellent or permethrin-treated clothing (especially during the daytime when mosquitos are active), using air conditioning or window/door screens to keep mosquitos outside, and

eliminating standing water from containers in yards (including bird baths, flower pots, buckets) to stop mosquito breeding.

Although mosquito bites are the main way that Zika virus is spread, Zika can also be spread through sex, and from a pregnant woman to her fetus. More information about preventing Zika virus infection can be found on the CDC website at <http://www.cdc.gov/zika/prevention/index.html>.

Are they developing a vaccine or treatment for the Zika Virus? Or is repelling mosquitoes the only way of prevention?

No vaccine yet exists to prevent Zika virus, so the primary means of prevention is to avoid mosquito bites by:

- Wearing long-sleeved shirts and long pants
- Using EPA-registered insect repellents
- Using permethrin-treated clothing
- Staying and sleeping in screened-in or air-conditioned rooms
- Avoiding or limiting outdoor activities during peak mosquito times.

Preventing mosquitoes from breeding around your home is also important. You can do this by:

- Eliminating standing water from containers in yards (including bird baths, flower pots, buckets) to stop mosquito breeding.
- Using EPA-registered larvicides to control mosquitoes in containers that cannot be emptied.
- Using insecticides to control adult mosquitoes around the yard. Always read and follow label instructions when using repellents or insecticides.

Are there long-term effects of Zika?

For most people, there does not appear to be long-term effects associated with Zika virus infection. Children born with microcephaly, a birth defect, or people who contract Guillain-Barré Syndrome, a nervous system disorder, may have long-term health problems. Some people, including those with no symptoms or signs of illness, could still have Zika in their bodies for weeks or months. The virus appears to remain in semen longer than in blood.

Does Zika cause Guillain-Barré Syndrome (GBS)?

Current CDC research suggests that GBS is strongly associated with Zika; however, only a small proportion of people with recent Zika virus infection get GBS. CDC continues to investigate the link between Zika and GBS. GBS is an uncommon sickness of the nervous system in which a person's own immune system damages the nerve cells, causing muscle weakness and, sometimes, paralysis. The Brazil Ministry of Health has reported an increased number of people who have been infected with Zika virus who also have GBS. GBS is very likely triggered by Zika in a small proportion of infections, much as it is after a variety of other infections. Most people fully recover, but some people experience permanent damage, and in rare cases, have died.

Zika and Pregnancy

How dangerous is Zika virus infection?

The CDC has concluded, after careful review of existing evidence, that Zika virus is a cause of microcephaly and other severe fetal brain defects. It does not mean, however, that all women who have Zika virus infection during pregnancy will have babies with problems. In other past Zika virus outbreaks, there have been reports of neurologic syndromes, such as Guillain-Barre Syndrome, in a small number of patients. Studies are still underway to learn more about health conditions associated with Zika virus and the effects of Zika virus infection during pregnancy.

What is microcephaly?

Microcephaly describes a condition where a baby has a head and brain that is smaller when compared with other babies of the same sex and age. Microcephaly is a clinical sign and not a disease. Babies born with microcephaly are at risk of developmental delay and intellectual disability and may also develop convulsions and physical disabilities including hearing and vision impairment. However, a proportion of these infants will have normal neurological development.

What special precautions should pregnant women take to prevent Zika virus?

The role of Zika virus infections during pregnancy is still being studied. The CDC advises that pregnant women avoid traveling to countries with ongoing Zika virus transmission. If travel cannot be avoided, talk to your doctor or other healthcare provider first and strictly follow steps to prevent mosquito bites during the trip. Given the potential risks of maternal Zika virus infection, pregnant women whose male partners lived in or traveled to an area with Zika should use a condom every time they have sex or not have sex during the pregnancy. To be effective, condoms must be used from start to finish, every time you have sex. This includes vaginal, anal and oral (mouth-to-genital) sex.

During mosquito season, it is recommended that pregnant women take the following steps to avoid mosquito bites:

- Choose an EPA-registered insect repellent and use according to the label instructions. Use the repellent day and night because the mosquito species that transmit Zika virus are daytime biters that will also enter buildings and bite at night. When used as directed, EPA-registered insect repellents are safe and effective for pregnant and breastfeeding women.
- Use permethrin-treated clothing;
- Cover exposed skin by wearing long sleeves, long pants, and hats; and
- Sleep indoors in rooms screened windows or air-conditioning, or use a bed net if you sleep in a room that is exposed to the outdoors.

Recommendations for pregnant women are being updated as more information is learned. Talk to your healthcare provider if you have questions.

Are there any other birth defects or problems that the Zika virus can cause?

In addition to microcephaly, other problems have been detected among fetuses and infants infected with Zika virus before birth, such as eye defects, hearing loss, and impaired growth. These problems can range from mild to severe, are often life-long, and in some cases can be life-threatening. Scientists continue to study the full range of other potential health problems that Zika virus infection during pregnancy may cause.

How do you determine if a fetus has microcephaly or any other birth defects?

During pregnancy, microcephaly can sometimes be diagnosed with an ultrasound test (which creates pictures of the fetus). To see microcephaly during pregnancy, the ultrasound test should be done late in the 2nd trimester, around 28 weeks, or early in the third trimester. For more information about screening and confirmatory tests during pregnancy, visit the CDC website at <http://www.cdc.gov/ncbddd/birthdefects/diagnosis.html>.

If a woman is infected with Zika will it affect future pregnancies?

According to the CDC: “Based on the available evidence, we think that Zika virus infection in a woman who is not pregnant would not pose a risk for birth defects in future pregnancies after the virus has cleared from her blood. From what we know about similar infections, once a person has been infected with Zika virus, he or she is likely to be protected from a future Zika infection.” More information is available at <http://www.cdc.gov/zika/pregnancy/question-answers.html>.

What is the Zika Pregnancy Registry?

To understand more about Zika virus infection during pregnancy and congenital Zika virus infections, CDC has established the U.S. Zika Pregnancy Registry. Data collected through this surveillance effort will help guide recommendations for clinical care and testing, plan for services for pregnant women and families affected by Zika virus, and improve prevention of Zika virus infection during pregnancy. Local health departments may reach out to health care providers caring for pregnant women who have any laboratory evidence of Zika virus infection (i.e., positive or inconclusive test results regardless of whether they have symptoms) and their infants to suggest they be added to the registry. More information can be found on the CDC’s US Zika Pregnancy Registry website at <http://www.cdc.gov/zika/hc-providers/registry.html>

What treatment exists for infants with congenital Zika?

No treatment is currently available for Zika. Care for these infants is focused on diagnosing and managing conditions that are present, monitoring the child’s development over time, and addressing problems as they arise.

What is the prognosis for a newborn with congenital Zika?

The prognosis for infants with congenital Zika is not known. In infants with severe microcephaly from other causes, a range of neurologic problems have been reported (e.g., intellectual disability, hearing loss, vision loss, and seizures). These problems can range from mild to severe, are often life-long, and in some cases can be life-threatening.

Which newborns should be tested for Zika?

Testing for Zika virus is recommended for infants born to women who traveled to or resided in an area with ongoing Zika virus transmission during pregnancy who were 1) diagnosed with microcephaly or intracranial calcifications detected prenatally or at birth, or 2) who have mothers with positive or inconclusive test results for Zika.

What about couples trying to become pregnant? How can they protect themselves?

Zika is of greatest health concern for pregnant women and those who may become pregnant while infected. [The CDC's guidance on the prevention of sexual transmission of Zika virus](#) was updated in July 2016. The timeframe for using condoms or waiting to have sex will vary based on the couple's situation and concerns. These recommendations are based on what is currently understood to be the timeframe that minimizes exposure to Zika virus in semen, vaginal fluids and blood. Current recommendations are:

- **Couples who are considering pregnancy** should talk to their healthcare provider if one or both partners live in or traveled to an area with Zika.
- **Pregnant couples should:**
 - Use condoms every time they have sex or not have sex throughout the pregnancy. This is important, even if the partner does not have symptoms of Zika or feel sick.
 - Not share sex toys throughout the pregnancy.
 - Take steps to prevent mosquito bites while in an area with Zika. Zika is mainly spread by the bite of infected mosquitoes.
 - Travelers should take steps to prevent mosquito bites for 3 weeks after returning from an area with Zika, even if they do not feel sick. This is because you can have Zika in your blood and a mosquito can bite you, get infected with Zika virus, and spread the virus to other people.
- **Couples with a partner who has traveled to an area with Zika** should use condoms or not have sex for:
 - At least 8 weeks after a Zika diagnosis or start of symptoms if the traveling partner is female.
 - At least 6 months after a Zika diagnosis or start of symptoms if the traveling partner is male. This extended period is because Zika stays in semen longer than in other body fluids.
 - At least 8 weeks after returning if the traveling partner (male or female) has no symptoms.
- **Couples living in an area with Zika**(<http://www.cdc.gov/zika/geo/index.html>) can use condoms or not have sex as long as there is Zika in the area. If either partner develops symptoms of Zika or has concerns, they should talk to a healthcare provider.

Anyone not concerned about pregnancy that wants to avoid getting or passing Zika during sex can use condoms every time they have sex, or not have sex. The recommended period of time for taking these precautions will depend on the couple's situation.

I want to travel, but I'm scared about Zika. What do I do?

If you are pregnant or trying to get pregnant, the CDC recommends you do not travel to areas with Zika virus transmission. If you are trying to get pregnant, talk to your doctor about your travel plans. The most updated map and listing of areas with Zika virus transmission, can be found here: <http://www.cdc.gov/zika/geo/index.html>.

For everyone else, you should pack to prevent mosquito bites during and after your trip. Take the following steps while traveling to a Zika-affected area:

Before your trip: Check the CDC webpage for the latest travel notices (<http://wwwnc.cdc.gov/travel/page/zika-travel-information>). This is a great resource for all you need to know before you go. Also, pack to prevent—pack your insect repellent, long sleeves, long pants, mosquito nets, and condoms (if you plan to have sex).

During your trip: Protect yourself from mosquito bites. If possible, stay in places with air conditioning and with window/door screens. Use a bed net if air conditioned or screened rooms are not available or if sleeping outdoors.

After your trip: All travelers returning to the United States from an area with Zika should take steps to prevent mosquito bites for 3 weeks—even if you do not feel sick.

Protect yourself during sex: The number of weeks you need to protect yourself during sex depends on whether you or your partner has symptoms and whether you and/or your partner are trying to get pregnant. For specific guidelines, visit the CDC webpage located here: <http://www.cdc.gov/zika/prevention/protect-yourself-during-sex.html>.

I'm pregnant, and worried about Zika. How do I keep mosquitoes from biting me?

The best way to prevent Zika is to avoid mosquito bites. During mosquito season, it is recommended that pregnant women take the following steps:

- Choose an EPA-registered insect repellent and use according to the label instructions. Use the repellent day and night because the mosquito species that transmit Zika virus are daytime biters that will also enter buildings and bite at night. When used as directed, EPA-registered insect repellents are safe and effective for pregnant and breastfeeding women.
- Use permethrin-treated clothing;
- Cover exposed skin by wearing long sleeves, long pants, and hats; and
- Sleep indoors in rooms screened windows or air-conditioning, or use a bed net if you sleep in a room that is exposed to the outdoors.

If a woman is infected with Zika now will it affect a future pregnancy?

Based on information about similar infections, the CDC has stated that once a person has Zika virus, he or she is likely to be protected from future infection. It is recommended that women wait eight weeks to become pregnant after visiting a Zika-affected area.

Mosquitoes and Zika

Are the *Aedes* mosquitos that spread Zika found in Virginia?

While the primary carrier of the Zika virus is the *Aedes aegypti* mosquito, it is not regularly found in Northern Virginia. However, another potential carrier of the virus, *Aedes albopictus*, the Asian tiger mosquito, is found in this region.

Both mosquito species:

- can also transmit dengue and chikungunya viruses;
- typically lay eggs in containers that can hold water like buckets, bowls, animal dishes, flower pots and vases;
- are aggressive daytime biters but can also bite at night; and
- live in indoor and outdoor environments.

How long can a mosquito with Zika spread the virus?

Once a mosquito is infected with Zika virus, it will remain infected for life. A mosquito lifespan is up to 30 days. There is no evidence that a mosquito infected with Zika will have a shorter than expected lifespan.

Have mosquitoes carrying the Zika virus been found in VA or surrounding areas?

Currently, no transmission of Zika by mosquitoes has been detected in Virginia. All cases of Zika that have been identified in Fairfax County and in Virginia so far have been associated with travel to a Zika-affected area.

Does Fairfax County have a map of the known distribution of *Aedes aegypti* and or *Aedes albopictus* in the county?

Aedes aegypti, the primary species that is currently spreading Zika, is a tropical and sub-tropical mosquito whose range is generally limited to the Gulf Coast states in the central and southeastern United States. Although it has been detected in Fairfax County before, it is rare to find it here since this species is unable to survive our cold winters. *Aedes albopictus*, the Asian Tiger mosquito, is common and widespread throughout Fairfax County and the state of Virginia. Although this species could potentially spread Zika, it has not yet been proven to do so in the current outbreak.

The CDC has maps that illustrate the approximate potential range for *Aedes aegypti* and *Aedes albopictus* at the following link: <http://www.cdc.gov/zika/vector/range.html>. Fairfax County does not have county-level maps for these species. Although we do routine mosquito surveillance throughout the county at 71 different trap locations, the data are only a snapshot of a particular trap site.

What is Fairfax County doing to control mosquitoes that might carry Zika?

As part of its Zika response plan, the Fairfax County Health Department will be monitoring for Zika virus within the local mosquito population and taking other steps to prevent local transmission of the virus. These activities will include: inspecting properties for every human case of Zika to eliminate mosquito breeding sites through source reduction (tip and toss standing water); setting traps to collect mosquitoes to test for Zika; conducting targeted larviciding (for containers that can hold water but cannot be covered or emptied) to kill mosquitoes before they become flying adults; and applying a barrier spray of liquid permethrin to vegetation to help control adult mosquitoes (if such actions are necessary to protect public health). The County is also dedicating resources to the development and distribution of Zika-related educational materials which inform residents about ways of reducing mosquitoes on their property and avoiding mosquito bites.

Why does the Health Department set up mosquito traps?

Surveillance is one of the key components of the Disease Carrying Insects Program (DCIP). Every summer, the Fairfax County Health Department traps mosquitoes and ticks as part of routine surveillance for disease such as West Nile virus and Lyme disease. Traps are set up in dozens of locations throughout the Fairfax community on a weekly basis to collect adult mosquitoes. Some traps are about the size of an office trash can and are set on the ground; others are hung from a tree and are about 5 feet long. This summer we are conducting enhanced surveillance for the Zika virus and will be setting up specialized traps to attract and collect the *Aedes* species of mosquitoes. The data collected will be used to monitor public health risk levels and enable the Health Department to act quickly when these risk levels are elevated.

How does the Health Department do mosquito control?

The Health Department uses an integrated approach to mosquito control that includes education, source reduction, larviciding and other control measures, as needed.

- **Source Reduction:** The Health Department encourages residents to eliminate sources of standing water where mosquitoes like to lay their eggs, such as tires, buckets, flower pots, corrugated drain pipes, tarps, bird baths, toys, etc. Containers that cannot be discarded should be stored indoors. This is the most effective way to control mosquitoes.
- **Larviciding:** The Health Department uses bacterial insecticides to kill mosquitoes when they are in the aquatic larval form, before they mature into flying adults. For example, the Health Department treats storm drains in the County with a larvicide. This is done annually from May to October, with each cycle dependent on climatic factors and mosquito surveillance results. Larvicides may also be used in containers that are not easily emptied out, or larger bodies of water such as stormwater management structures.
- **Adulticiding:** Adulticides are pesticides used to control adult mosquitoes. At times the use of an adulticide, such as a barrier spray of liquid permethrin, is a necessary part of an integrated approach to mosquito control that helps to reduce the population of adult

mosquitoes which can spread disease to humans. Permethrin is a widely-used product that when applied at mosquito control rates, is low in toxicity to mammals, and is practically nontoxic to birds. The product is applied to vegetation and produces a residue, which delivers extended control beyond that initial application. Permethrin has been registered by EPA since 1977. It is currently registered and sold in a number of products such as household insect foggers and sprays, tick and flea sprays for yards, flea dips and sprays for cats and dogs, termite treatments, agricultural and livestock products, and mosquito abatement products. Permethrin is a broad-spectrum pesticide meaning that it may affect non-target organisms like bees and butterflies. However, when applied according to label instructions, impacts to non-target organisms are minimized.

What are larvicides and how do they work?

Larvicides are pesticides designed to be applied directly to water habitats to control mosquito larvae before they mature into adult mosquitoes. Pesticides used for larviciding may include biological agents (naturally occurring bacteria that are toxic to some insects when eaten, such as *Bacillus thuringiensis* var. *israelensis*, or Bti), surface agents (highly refined mineral oils or monomolecular films that spread across the surface of the water), and insect growth regulators methoprene and dimilin (chemicals that are added to the water to disrupt the normal maturation process of mosquito larvae). Liquid larvicide products are applied directly to water using backpack sprayers and truck or aircraft-mounted sprayers. Tablet, pellet, granular, and briquet formulations of larvicides can also be applied to breeding areas.

What is Bti?

Bacillus thuringiensis (Bti) is a species of bacteria that lives in soil. It makes proteins that are toxic to some insects when eaten, but not others. The proteins are not toxic to humans because, like all mammals, we cannot activate them. Target insects include mosquitoes, beetles, black flies, caterpillars, and moths. Bt is not toxic to non-target wildlife.

Where can Bti been used for mosquito control?

Bacillus thuringiensis var. *israelensis*, or Bti, are designed to kill developing mosquito larvae when applied to standing water where those larvae are found. Bti can be used around homes in areas and containers where water can collect, such as flower pots, tires, and bird baths. Bti can also be used to treat larger bodies of water like ponds, lakes, and irrigation ditches. Bti is used across the United States for mosquito control.

Does Bti pose health risks to humans?

No, Bti has no toxicity to people and is approved for use for pest control in organic farming operations. It has been well tested by many studies on acute toxicity and pathogenicity (ability to cause disease) for *Bacillus thuringiensis* including studies specifically on Bti. Based on these studies, EPA has concluded that Bti does not pose a risk to humans.

Are there special precautions to be taken during Bti applications?

No special precautions are needed for applying Bti. A number of Bti products are sold as “homeowner” products and are easy and safe to use. People do not need to leave areas being treated. However, as is the case with many microbial pesticides, some commercial use Bti products may require applicators to wear a dust/mist filtering mask.

Does Bti pose risk to crops or water supplies?

No. Bti has no toxicity to people so it can be applied safely to mosquito habitat without a detrimental impact on food crops or water supplies. In fact, Bti can be used for pest control in organic farming operations.

Is Bti harmful to wildlife including honey bees?

Studies indicate Bti has minimal toxicity to honey bees. Bti produces toxins that specifically affect the larvae of only mosquitoes, black flies and fungus gnats. These toxins do not affect other types of insects, including honey bees.

What are adulticides and how do they work?

Adulticides are pesticides used to control adult mosquitoes. Adulticiding is often initiated when there is evidence of significant risk of disease transmission from mosquitoes in an area. The most common method of adulticiding is ultra-low volume (ULV) spraying. ULV spraying (also occasionally called fogging) is the process of putting very small amounts of liquid (typically one ounce per acre or less) into the air as a fine mist of droplets. These droplets float on the air currents and quickly kill mosquitoes that come into contact with them. ULV adulticides are applied when mosquitoes are most active - typically early evening or pre-dawn. This typically done either by aircraft or on the ground employing truck-mounted sprayers. Another common method of adulticiding is the spraying of residual insecticide barriers on the foliage of shrubs, hedges, ivy, other low vegetation or walls, or other areas where these mosquitoes may rest. Residual means that the insecticide deposits a residue and stays effective for a period of time beyond the initial treatment. For barrier treatments, the Health Department uses backpack sprayers to apply liquid permethrin. When properly used, this product poses no significant risks to human health.

What is permethrin?

Permethrin is a member of the category of pesticides called synthetic pyrethroids, which are synthetic versions of pesticides produced by plants called pyrethrins. The U.S. Environmental Protection Agency (EPA) states that pyrethroids can be used for public health mosquito control programs without posing unreasonable risks to human health when applied according to label instructions.

Permethrin has been registered by EPA since 1977. It is currently registered and sold in a number of products such as household insect foggers and sprays, tick and flea sprays for yards, flea dips and sprays for cats and dogs, termite treatments, agricultural and livestock products, and mosquito abatement products

Do pyrethroids pose risks to human health?

EPA has conducted human health risk assessments for all labeled uses of pyrethroids. Based on the results of these assessments and any required label changes, pyrethroids can be used for public health mosquito control programs without posing unreasonable risks to human health when applied according to the label instructions. At high exposure levels, such as those resulting from accidents or spills, pyrethroids can affect the nervous system.

Do pyrethroids pose risks to wildlife or the environment?

According to the EPA, when applied according to label directions, pyrethroids used in mosquito control programs do not pose unreasonable risks to wildlife or the environment. Pyrethroids are low in toxicity to mammals and are practically nontoxic to birds. However, pyrethroids are toxic to fish and to bees. For this reason, EPA has established specific precautions on the label to reduce such risks, including restrictions that prohibit the direct application of products to open water. There also is language on product labels to reduce risks to pollinators. Always read the product label and follow its directions carefully when using any pesticide.

How can I reduce my exposure during pesticide treatments?

You can reduce the risk of direct exposure to pesticides by taking the following precautions:

- Plan your activities to limit time spent outside during times of possible pesticide treatments;
- Move your pets, their food and water dishes inside during applications. Also bring clothing and children's toys inside;
- If outdoor equipment and toys are exposed to pesticides, wash them with soap and water before using again;
- Stay away from application equipment, whether or not it is in use. Stay away from the treated area during application until the amount of time specified on the label, or until it is completely dry. Shaded areas may take longer to dry;
- Whenever possible, remain indoors with windows closed, window air conditioners on non-vent (closed to the outside air), and window fans turned off during spraying.
- Avoid direct contact with surfaces still wet from pesticide spraying. Do not allow children to play in areas that have been sprayed until they have completely dried, as stated on the label instructions (approximately one-half hour); and
- If you must remain outdoors, avoid eye and skin contact with the spray. If you get spray in your eyes or on your skin, immediately flush and rinse with water.

Do mosquito or bug repellents help prevent a bite from a Zika-infected mosquito?

The CDC recommends using an EPA-registered insect repellent (bug spray) like DEET, picaridin, oil of lemon eucalyptus, or IR3535. According to the CDC, most repellents can be used on pregnant women and children older than two months. It is important to always follow label instructions. More information on using insect repellents can be found at <http://www.fairfaxcounty.gov/hd/westnile/wnvrepel.htmx>.

What is DEET?

DEET is a chemical used in some insect repellents. The amount of DEET in insect repellents varies from product to product, so it's important to read the label of any product you use. The amount of DEET may range from less than 10% to more than 30%.

What is the recommended percentage of DEET that is safe for human adults? What is the recommended percentage of DEET that is safe for human infants and children?

The most important thing when applying any repellent is to read and follow the label directions, as this will help you use the product with the highest level of safety and effectiveness. Lower concentrations of DEET are just as effective as higher concentrations, however the duration of protection increases with concentration. A low concentration may provide 1 to 2 hours of protection, whereas a higher concentration may last for 6 to 8 hours. The American Academy of Pediatrics recommends the use of up to 30% DEET for children 2 months of age and older. Insect repellents also are not recommended for children younger than 2 months.

Is it safe to use insect repellent on children?

When used as directed, EPA-approved insect repellents are safe and effective on children. Apply according to the product label instructions. If you have a baby or young child:

- Do not use insect repellent on babies younger than 2 months old;
- Do not use products containing oil of lemon eucalyptus or para-menthane-diol on children younger than 3 years old;
- Dress your child in clothing that covers arms and legs;
- Cover crib, stroller and baby carrier with mosquito netting;
- Do not apply insect repellent onto a child's hands, eyes, mouth or a cut or irritated skin; and
- Adults: Spray insect repellent onto your hands and then apply to a child's face.

What are alternative natural remedies to repel the mosquitos?

The CDC recommends using products that have been scientifically proven to repel mosquitoes and that contain active ingredients which have been registered with the EPA for use as insect repellents on skin or clothing. Some natural or homemade insect repellents, often made with natural oils, have not been tested for effectiveness and may not protect you from mosquito bites. More information on using insect repellents can be found at <http://www.fairfaxcounty.gov/hd/westnile/wnvrepel.htm>.

What can I do to control mosquitoes around my home?

Do the following:

- **Install or repair and use window and door screens.** Do not leave doors propped open;
- **Use air conditioning** when possible;

- **Once a week**, empty and scrub, turn over, cover, or throw out any items that hold water like tires, buckets, planters, toys, pools, birdbaths, flowerpot saucers, or trash containers;
- **Use an outdoor insect spray** to kill adult mosquitoes in areas where they rest. You can also hire a mosquito control professional to apply a barrier treatment to your yard. For guidance about chemical control of adult mosquitoes and tips for hiring a pest control professional, see the following document:
<http://www.fairfaxcounty.gov/hd/westnile/wnvpdf/hiring-a-pest-professional.pdf>;
- **If you have a septic tank, repair cracks or gaps.** Cover open vent or plumbing pipes. Use wire mesh with holes smaller than an adult mosquito;
- **Tightly cover water storage containers** (buckets, cisterns, rain barrels) so that mosquitoes cannot get inside to lay eggs; and
- **Use larvicides to kill young mosquitoes** in large containers of water that will not be used for drinking and cannot be covered or dumped out. Products such as Mosquito Dunks, containing the active ingredient Bti, are available at hardware stores and garden centers.

Why don't Zika-carrying mosquitoes breed in shallow ponds?

The mosquitoes that can transmit Zika, such as the Asian tiger mosquito, prefer to lay eggs in artificial containers—not ponds, ditches or marshland areas. Because they are not strong fliers and therefore are generally found close to their breeding sites, the most effective way to prevent the spread of Zika through mosquitoes is by “tipping and tossing” containers of water in backyards and taking other steps to prevent mosquito bites.

Begin by walking your yard and looking for containers that are holding water. Tip and toss any standing water you may find. Check tarps, garbage can lids, children's toys, potted plants – especially those with saucers, grill and furniture covers, buckets, and black corrugated pipes. Discard containers you don't need or store them in a place where they will not collect water. These mosquitoes can occupy as little as one teaspoon of water.

What should I be “tipping and tossing”?

Here are some locations around your property to check at least weekly for standing water:

- Buckets, watering cans, bottle caps or any trash that can hold water
- Corrugated pipes for downspout drainage
- Bird baths and pet water bowls
- Potted plants with saucers
- Children's toys
- Tarps on woodpiles and garden equipment;
- Grill and patio furniture
- Wheelbarrows

- Containers under decks and porches
- Garbage cans, recycle bins and other barrels
- Tires
- Boats and boat covers

Not everyone will check or know to check these locations, so please share this information with neighbors and your homeowner's association. If you would like help locating where mosquitoes on your property might be coming from, the Health Department can inspect your yard. Please contact the Health Department at 703-246-8931, TTY 711.

What about spraying? Is that effective?

Control and prevention for the *Aedes* species of mosquito requires tactics that are different than what is normally to control other mosquito species. For example, the treating of neighborhoods with truck-mounted foggers and larviciding puddles and stagnant water in ditches, swamps, or streams will not be as effective at controlling the mosquito species that transmit Zika as they are against some other types of mosquitoes. Zika mosquitoes breed in artificial containers of water – not in dirt lined puddles, ponds or swampy areas. They also fly and bite during the daylight hours. Effective treatment of a neighborhood often requires a property-to-property effort.

Mosquito control and prevention may require:

- Thorough inspection of residential and commercial properties to find and eliminate, dump, or treat the containers of water that these mosquito species lay their eggs in;
- Spraying of aerosol fogs directly into the foliage of shrubs, hedges, ivy and other vegetation or structures where these mosquitoes rest; and
- Spraying of residual insecticide barriers on the foliage of shrubs, hedges, ivy, other low vegetation or walls or other properties where these mosquitoes are abundant. Residual means that the insecticide stays effective for a period of time after the initial pesticide application.

Some people suggest building bat houses to encourage bats to eat mosquitoes. Is that a good strategy?

According to Virginia public health entomologist Dr. David Gaines: "It is a myth that bats have any significant impact on mosquito populations." Bats concentrate their feeding efforts on bigger prey, such as moths and beetles. As a means of controlling mosquitoes that can spread Zika virus, building bat houses is also not likely to be effective as Asian tiger mosquitoes fly predominantly during the daylight hours, when bats are not active, Gaines says.

What is the specific guidance to communities and HOAs with storm water drainage parcels? A lot of these land areas stay wet and marshy and swampy for weeks after a rainfall.

The Asian Tiger mosquitoes that have the potential to transmit Zika virus in Fairfax County develop exclusively in artificial containers commonly found around the yard, such as birdbaths, buckets, tires, corrugated downspout extensions, tarps, potted plant saucers, and many others. This species does not occupy stormwater management structures such as retention and detention ponds, ditches, and streams. However, stormwater management structures could still be potential breeding sites for other types of mosquitoes, such as those that can spread West Nile virus. If you have questions or concerns about mosquito breeding in those environments, you may contact our Disease Carrying Insects Program at fightthebite@fairfaxcounty.gov or 703-246-8931, TTY 711.

The Health Department's Zika webpage (<http://www.fairfaxcounty.gov/hd/westnile/zika-virus.htm>) has many resources for HOAs hoping to prevent mosquito-borne diseases, including sample articles and a fact sheet on hiring professional pest companies to do mosquito control.

If Zika transmission begins to occur in Fairfax County, would there be any plans for potential mosquito eradication? If so, what would that entail?

It is unlikely that we could ever eliminate mosquitoes entirely. However, our Disease Carrying Insects Program practices integrated pest control, which emphasizes a variety of means to reduce mosquito populations. Some of those activities include:

- Education about mosquito bite prevention (Wearing long-sleeved shirts and long pants, using EPA-registered insect repellents, using permethrin-treated clothing staying and sleeping in screened-in or air-conditioned rooms, and avoiding or limiting outdoor activities during peak mosquito times;
- Source reduction (elimination of containers holding water);
- Larval mosquito control (application of a bacterial pesticide that kills mosquito larvae in the water);
- Mosquito surveillance (trapping adult mosquitoes and testing them for diseases such as West Nile and Zika); and
- Adult mosquito control (application of a liquid pesticide to vegetation to kill adult mosquitoes).

These activities and others might occur in areas where mosquito or human surveillance indicates the presence of Zika virus. Currently, the County is not conducting area-wide Ultra Low Volume (ULV) spraying in Fairfax County from trucks or aircraft. These strategies are, however, options as part of our Zika action plan if we were to see evidence of local transmission of Zika by mosquitoes in many locations (such as in south Florida) and/or cases that cover a wide geographic area.

Are there planned dates for mosquito spraying?

Adult mosquito control activities related to Zika are based on human and/or mosquito surveillance, and there are no current plans to do wide-area pesticide treatments. But if

necessary, the Health Department will intensify our mosquito control and abatement activities in response to local cases in an effort to prevent widespread transmission of the virus and wide-area treatments to control adult mosquitoes may be conducted as part of the integrated mosquito control plan.

How can I report standing water to the Health Department?

The Health Department does routinely respond to inquiries about standing water. You can submit your concern or contact us directly to report standing water at 703-246-8931, TTY 711 or email to fightthebite@fairfaxcounty.gov.

The Health Department inspects some county-owned and maintained stormwater structures such as retention and detention ponds for mosquitoes. However, the mosquitoes that have the potential to transmit Zika in Fairfax County develop exclusively in containers of standing water that are found around our homes. At citizen's request, we can also inspect private property to help identify and eliminate standing water. Residents who would like assistance in identifying ways that they can reduce mosquitoes around their home can also call us at 703-246-8931, TTY 711.

Where can I get more information?

For additional information on Zika, please visit the CDC website: <http://www.cdc.gov/zika/> or the Virginia Department of Health website at <http://www.vdh.virginia.gov/epidemiology/zika-virus-update/>.

Sources:

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Zika Virus: Prevention, CDC, <http://www.cdc.gov/zika/prevention/index.html>

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Zika, VDH, <http://www.vdh.virginia.gov/epidemiology/zika-virus-update/>

Zika FAQs for Clinicians, VDH, <http://www.vdh.virginia.gov/content/uploads/sites/3/2016/03/Zika-FAQ-for-Clinicians.pdf>

National Pesticide Information Center, <http://npic.orst.edu/index.html>

Mosquito Control, U.S. Environmental Protection Agency, <https://www.epa.gov/mosquitocontrol>

Choosing an Insect Repellent for Your Child, HealthyChildren.Org, <https://www.healthychildren.org/English/safety-prevention/at-play/Pages/Insect-Repellents.aspx>